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Angela L. Boyd
Angela L. Boyd

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Robert Ernest Troxler

Group Art Unit: 2636

Serial No.: 10/035,937

Examiner: Trieu, Van Thanh

Filed: December 26, 2001

Docket No.: 1450/2

Confirmation No.: 3607

For: LARGE AREA POSITION/PROXIMITY CORRECTION DEVICE WITH ALARMS
USING (D)GPS TECHNOLOGY

* * * * *

DECLARATION OF PRIOR INVENTION PURSUANT TO 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir.

I, Robert Ernest Troxler, hereby declare as follows:

1. I am the sole inventor of the claims of U.S. Patent Application no. 10/035,937 filed December 26, 2001, which relates to devices, systems, and methods for indicating a position of a movable device with respect to a geographical area.
2. I have reviewed Claims 15 and 24 of the subject patent application, and I conceived of the invention defined in those claims at least as early as July 13, 1999, as evidenced by certain pages of Mr. Troxler's Workbook, a copy of which is attached hereto:

3. The pages of Mr. Troxler's Workbook dated prior to July 13, 1999 includes notes describing a movable boundary detection device and related methods and systems as claimed in at least Claims 15 and 24 of the subject patent application. Specifically, the pages describe a GPS-based device.
4. I was the originator of the pertinent subject matter described in the subject Workbook pages of dated prior to July 13, 1999.
5. I worked continuously until the invention was reduced to practice with the filing of U.S. Provisional Patent Application No. 60/258,246 on December 26, 2000.

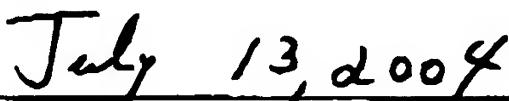
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this Declaration is directed.

By:



Robert Ernest Troxler

Date:



July 13, 2004



CONFIDENTIAL

COPY

OCT 23, 1997

Conception of the K-9 "Walkright" Electronic
leash training device.

While talking to Geoff Holden in my kitchen, we agreed that there was a market for just such a device. We were discussing patents and I was discussing how alternative uses for current inventions was eligible to receive a patent. I used the dog leash connector as an example, and Geoff further encouraged and enhanced the idea.

We immediately set to work to buy an existing electronic collar to modify for our testing. We purchased a Radio systems UL-250 for about \$50.00 for this purpose. Geoff sketched out a possible switch mechanism, and I decided the electronics of the collar we had took the collar to a place with house flat line voltages and an antenna source to power the collar. The idea is to remove the RF electronics and just use his switch to apply the proper voltage to "ring" the collar. We failed at our first attempt. Holden and Geoff had understood by Robert Taylor and Geoff

②

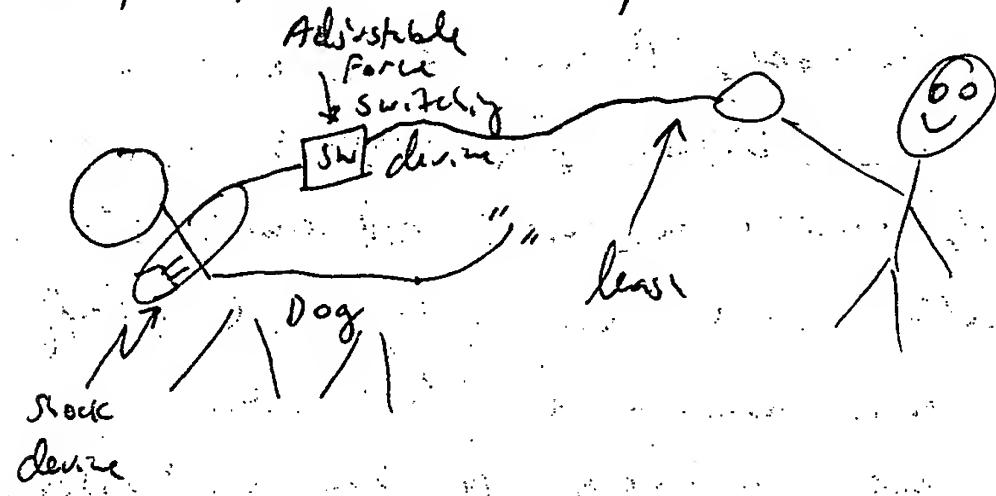
10-

27-97

I

Description of device:

The "Shock" collar will be used in a design such that when a predetermined force of the dog pulls his master while walking, a corrective signal is applied to the dog through electric shock, audible sound, and ultra sonic output.



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Mr. K

Electrical & Robot

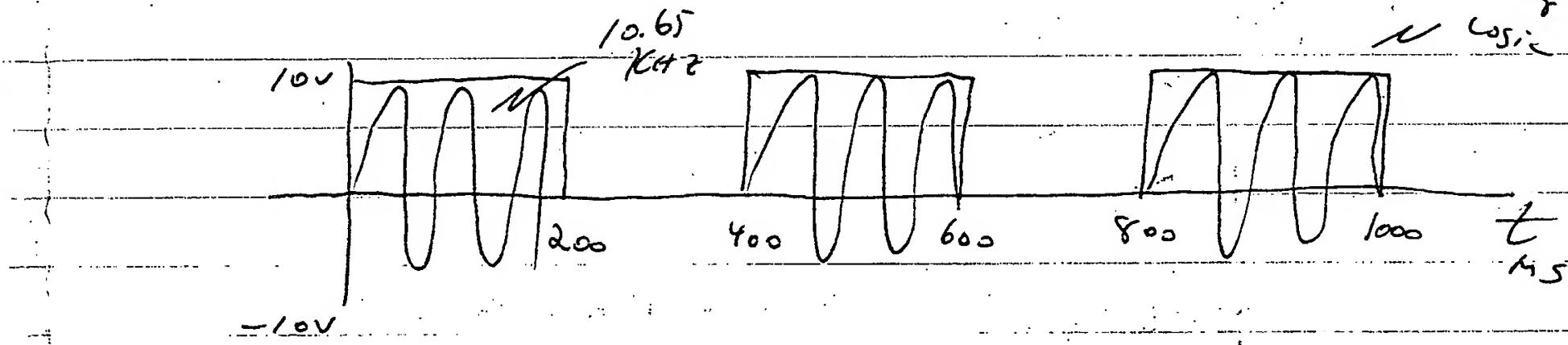
10-30-97

I E-mailed CCutshaw@Radiosys.com

to ask how the system worked. Was it
coded and modulated I asked? The answer was
flat the UL-250 was coded and modulated
But I believe they just the cros.

The Colle operates at 10.65 kHz and to "ring" it,
one must pulse the Transmitter 3 times / sec.

If a 10v load were on the transmitter, the
signal might look like this

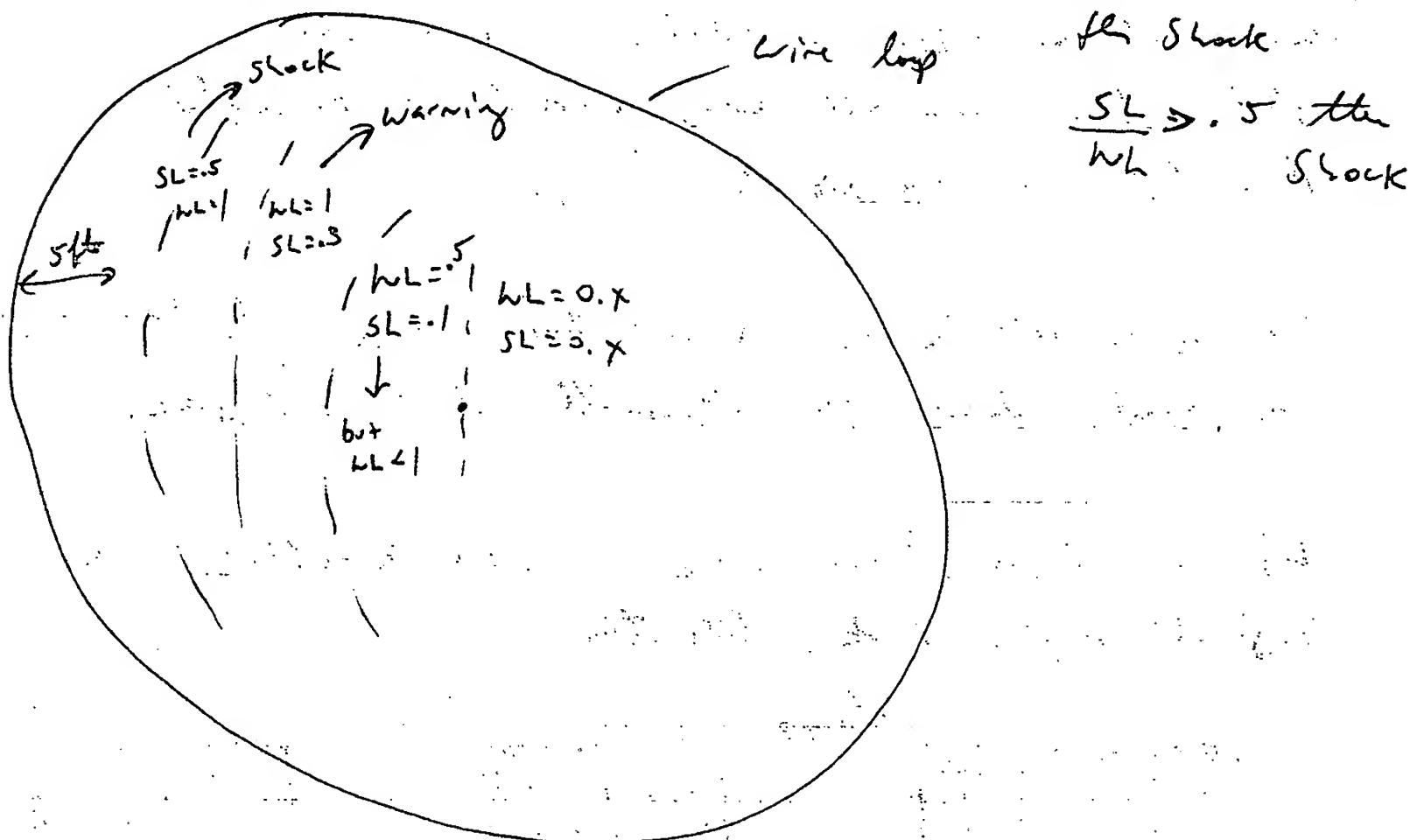


Note: for the warning signal, the peak voltage might
be at 10v. However, the shock voltage output
would be less. Here, the field intensity is great
for the warning to reach further into the yard.

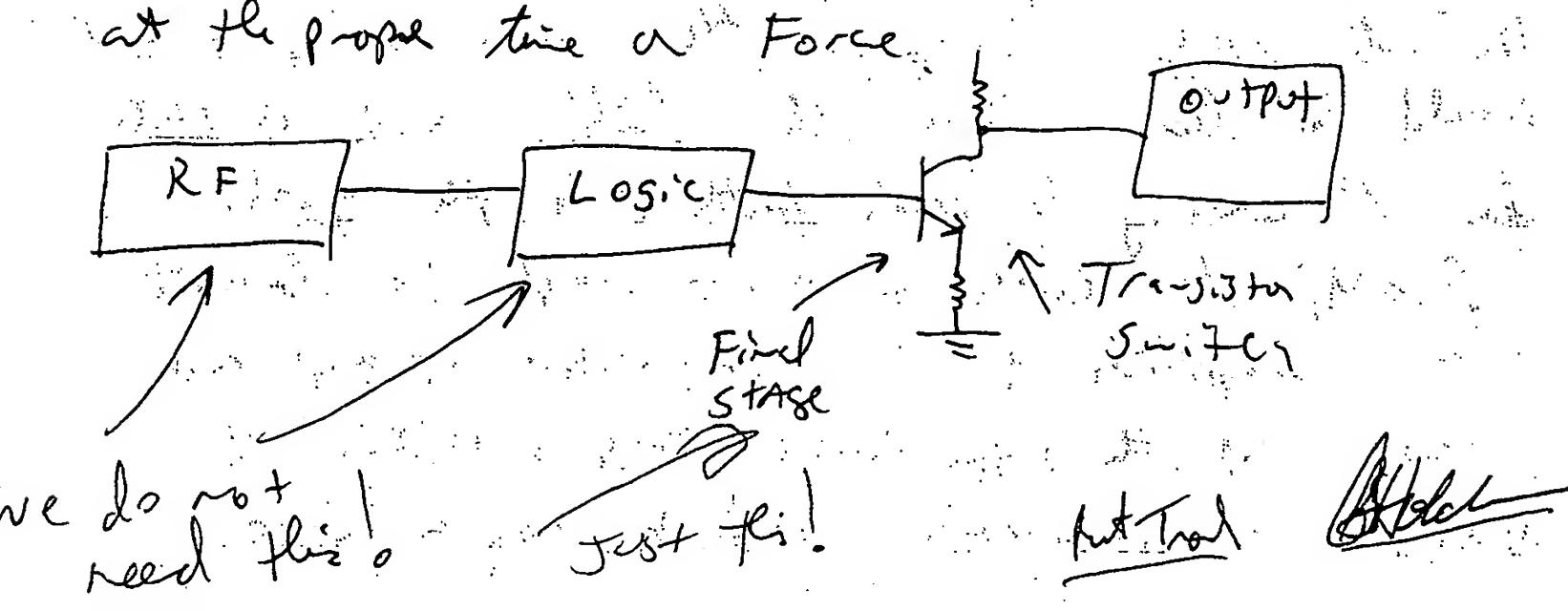
Possibly, the Colle is smart enough to look at
two Amplitudes thru a Comparator OP Amp and
not trip the proper receiver response until the
Voltage were high enough. Could be very a ratio

(4)

in the logic along w/ peak.

17 Warning level $= 1V_{pp} = NL$ $SL = Shock level = \frac{1}{2} Warning level$ 

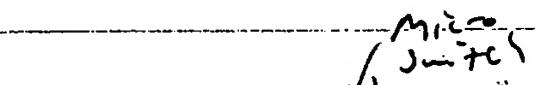
At Any Rate, we will not use the RF Section or logic. All we need to do is to put a Control Voltage to the trigger at the proper time or Force.



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So all we need is an adjustable force sensor,
could be load cell or simply a micro switch

One Spring



law 1

modified
Fiss scale

Use supply on
dog collar

SV

o + 5

Correct
Output

Surfacing Transit

World Problem

H.51 Infected
Low ~~leaves~~

Read & Understand

Ralt Tord

4. Edgar

(6)

1-10-98

Today I investigated my Dog Guard Transmitter.

They have 2 systems,

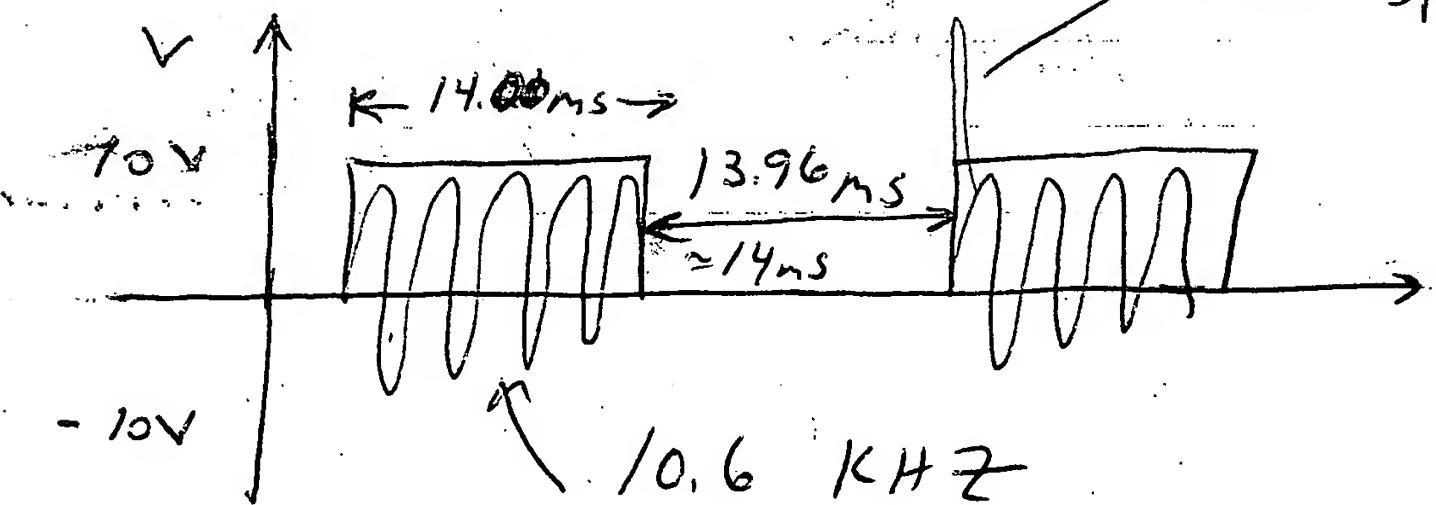
1) 7.45 kHz

2) 10.65 kHz

10.8 kHz

my 10.65 kHz system is duty cycled such that

has 50% spikes



≈ 6 "rings" ≈ 155ms

Chips inside x-mitter Lm556CN P1602 AB SPI
Lm3900N M9702 FET

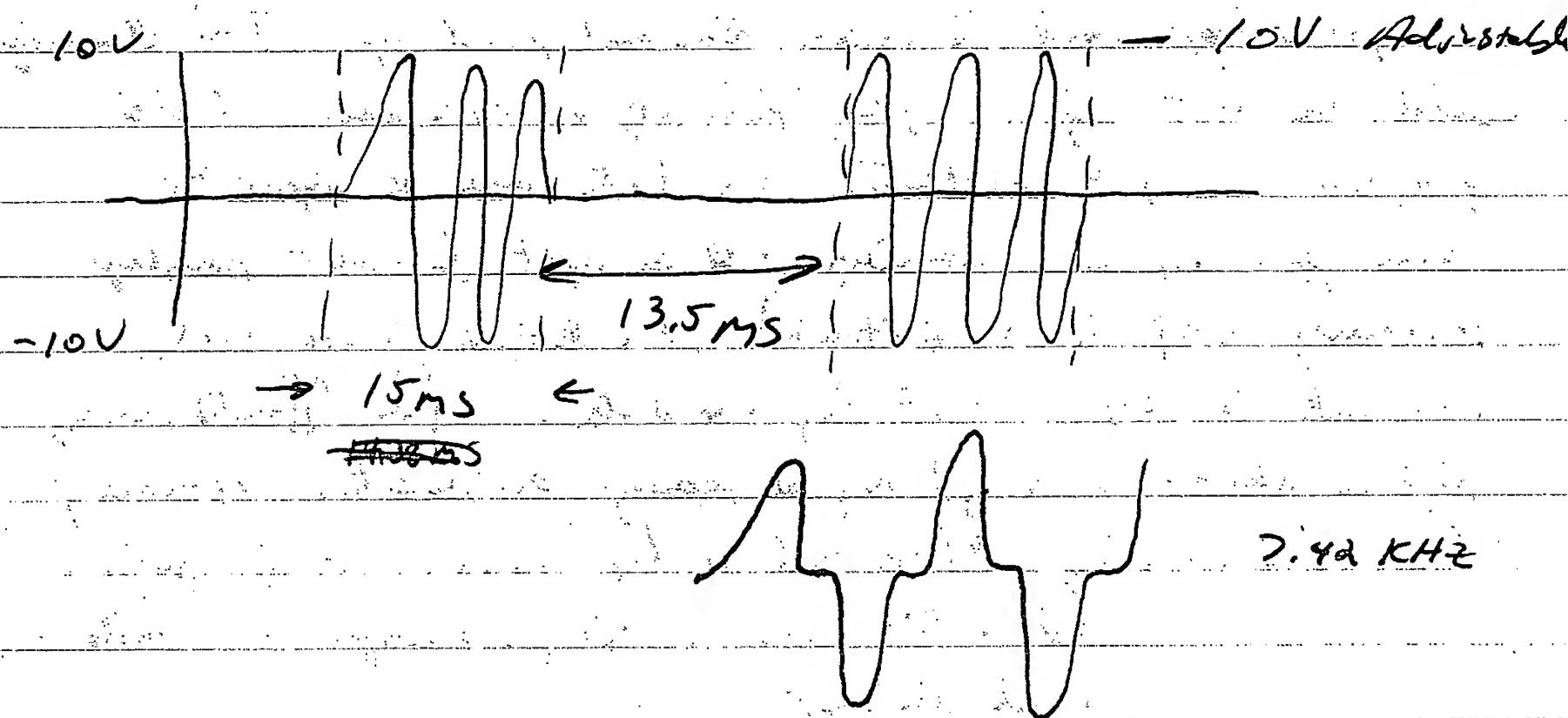
$C_9 = \frac{1.01}{4.01}$ $C_7 = 47\mu F$ $C_8 = 10\mu F$

$C_6 = 47\mu F$

SUN Jan 18 98

Had my Dog Guard x-mitter charged to 7.45 kHz
so that Buzz's collar would work at Cissy's house.
His collar was also adjusted.

X-mitter waveforms. Hook Bad



MON Jan 19, '98

According to a paper at the TRB conference,
GPS is possible to move close to the man range.
Incorporate this into a collar that does not need a
wire. Simply program the coordinates. One could
walk the boundary (or drive) and let a programme
actually load the coordinates in to the system.

Wed Jan 21 1998

3-6

We could use the radio system VL-250 Slack
 Coil and integrate it with the collar with the GPS system. The
 antenna and collar w/ GPS with the slack and a cable also would
 be on piece. The audible alarm could be an anti boundary (10m)
 and the slack at say 2 meters. Both accuracy could be obtained
 by different GPS. The antenna could be a windup antenna/passive
 or maybe a loop around the collar. Beam must point up. The Boundary
 could be set by a laptop, palm pilot, or other means. Could
 program X Y Z coordinates. Coordinate could be input by
 hand off a map too. Consider could be input to convert Boundary
 to boundary (keep dog out of street). A Call BACK locator could
 be used to 06 for lost dog coordinates. For different mode,
 A base station (stationary) may be necessary on the site. A boundary
 with a boundary could be used to keep animal out of garden.
 - need to find low power circuit for prototype or build one.
 - Check the "act"
 - Probably best for large animal containment

1-28-98

Motorola, Sirc, Game, trimble radio system

2-10-98 Been getting Patents for Animal Containment off the net

Could also use Velocity Predictor in algorithm. Use Velocity
 to calculate expected time-distance to boundary.

7-7-98 Contacted Motorola for PARTS for GPS Dog Collar

3-6-99 -

PP-86-1

Low Cost Magnetic Dog fence

Instead of using RF for fencing, use a very small DC current loop and an anisotropic magnetoresistive sensor. Here we detect the \vec{H} field produced by the current loop.

(Still working & collecting information on Hg)
GPS XYZ Dog fence.

ATTRIBUTES - To investigate	Low power (Battery operated + timer) Spatial Resolution (not function of angle) Inertial Cheep
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Could possibly modulate the DC field and obtain Dog Head orientation from Earth's mag field and to correct for orientation if needed.

Could also use passive system whereby Iron stakes are deeply driven into soil at the boundary. Detect fence status. Possible problems w/ other iron or metal pipes in the area. Stakes could keep dogs out of garden areas.